

# The Zipf law for random texts with unequal letter probabilities and the pascal pyramid

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## Abstract

We study a model of generating words with independent unequal probabilities of letters. We prove that the probability  $p(r)$  of words of rank  $r$  has a power asymptotics. As distinct from a paper published earlier by B. Conrad and M. Mitzenmacher, we give a short proof, using elementary methods, and obtain an explicit formula for the degree of the power law. © Allerton Press, Inc., 2012.

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## Keywords

Functional equations, Monkey model, Order statistics, Pascal pyramid, Power laws, Recursive sequences, Zipf law